



## Phonological processing in post-lingual deafness and cochlear implant outcome.

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Table 1: Clinical data of the 8 profound deaf candidates for cochlear implantation

Patient no.	Sex	Age at experiment (year)	Bilateral HL duration (year)	Deafness duration (month)	WRS pre-CI* (% , 60 dB)	WRS post-CI (% , 60 dB)
1	F	67.7	46	36	0	48
2	M	45	26	4	0	41
3	F	32	10	12	0	69
4	F	56.2	23	36	0	24
5	F	56	22	48	0	48
6	F	73	16	8	0	86
7	M	31.7	18	216	36	X
8	F	54.7	30	360	50	28

HL = hearing loss. WRS = word recognition scores

There was no statistical correlation between age and deafness duration.

Patient 7 was not implanted for personal reasons.

\* With optimally fitted hearing aids, Lafon test

Table 2: Whole brain correlation with post-CI word recognition

Correlation	L/R	Region	BA	MNI coordinates	Cluster size	Z score
Positive	L	Premotor cortex	6	-48 8 34	12	2.79
	L	Premotor cortex	6	-28 -8 60	12	4.00
	L	Superior parietal lobule	7	-10 -72 62	51	3.12
	L	Middle occipital gyrus	18	-10 -104 18	109	12.98
	R	Middle occipital gyrus	18	30 -84 4	35	3.71
	L	Middle temporal gyrus	37	-54 -54 0	20	2.91
Negative	L	Temporal pole	22	-54 4 0	76	17.49
	L	Temporal pole	22	-46 8 -16	108	6.33
	L	Inferior frontal gyrus	47	-36 28 -20	30	3.18
	R	Inferior frontal gyrus	47	36 24 -20	186	3.49
	R	Inferior frontal gyrus	47	44 36 -10	73	3.40
	L	Middle temporal gyrus	21	-48 -36 -6	77	3.35
	L	Middle occipital gyrus	19	-46 -74 6	35	3.70
	R	Supramarginal gyrus	40	56 -34 26	11	3.51

Table 3: Whole brain correlation with hearing loss duration and direct group comparison

Patients > Controls

Correlation	L/R	Region	BA	MNI coordinates	Cluster size	Z score
Negative with HL	L	Inferior frontal gyrus	44	-52 10 26	41	4.30
	L	Middle occipital gyrus	18	-26 -94 0	34	3.62
Positive with HL	L	Inferior frontal gyrus	47	-44 28 -8	67	4.02
Patients > Controls	R	Surpamarginal gyrus	40	60 -34 22	73	4.43
Controls > Patients	-	-		-	-	-

HL = hearing loss duration

- = no significant result.